

# Aldous Huxley on the conquest of space

## Has Man's Conquest of Space Increased or Diminished His Stature?

"Has man's conquest of space increased or diminished his stature?" These ten simple words are pregnant with almost as many major problems in semantics. First of all, who or what is the "man" whose conquest of space is under discussion? The word "man" stands, in different contexts, for at least three distinct entities. Sometimes it stands for the species as a whole—for all the three thousand million specimens of *Homo sapiens* at present inhabiting our planet, and confidently expected (unless something extraordinarily bad or miraculously good should happen in the interval) to double their numbers in less than forty years. In other contexts "man" denotes the product of acculturation—the symbol-manipulating, tradition-following, tool-using *Homo faber* and *Homo loquax* of anthropology and history. Western Man, Oriental Man, Modern Man, Primitive Man, Christian Man, Post-Historic Man—for some years now such phrases have come trippingly off innumerable tongues. And finally the word "man" may stand for the human individual, male or female, black, white, or yellow, the psycho-physical organism that actually does the living, the procreating, and the dying. "Man"—and what we are now talking about is the unique, unrepeatable person, who may behave like Hitler or Gautama Buddha, like Newton or the *homme moyen sensuel* or the village idiot. "Man"—and now we have entered the subjective world and are naming the locus (one of the three billion loci) of unshareably private experiences. "Man"—and we are back again in a relatively public universe, recommending virtue to an inheritor of anti-social instincts, and preaching sweet reason to a compound of id, ego, and superego, which is at once the beneficiary and the victim of the particular culture into which it happens to have been born.

Many of the choicest, the most powerfully persuasive effects of theological, ethico-prophetic, and historico-philosophical literature are obtained by enunciating huge generalizations about "man," arguing from these propositions as though they were self-evident major premises, and triumphantly reaching foregone conclusions—all without informing the reader (for that would spoil everything) in which sense, at any given stage of the argument, the word "man" is being used. By this systematic use of double talk, any skillful writer can easily arrive at whatever metaphysical or ethical destination he may wish to reach. People who sprinkle their prose with the monosyllables of Anglo-Saxon scatology or pornography are prosecuted. But, as a matter of plain historical fact, unambiguous four-letter

smut has done incomparably less harm in the world than the studied ambiguous use of such three-letter multi-purpose words as “man” and “god,” or that grand five-letter heretic-burner and crusade-starter, “Truth”—with the largest possible capital T.

In which of its meanings, we now inquire, is the word “man” being used in our question about the effects on “man’s stature” of “man’s conquest of space”? There is nothing in the question itself to indicate which kind of “man” is being talked about. But we may assume, I think, that all three principal meanings of the word are involved. If space has in fact been “conquered,” the conquest is clearly the work of acculturated man. What in fact has happened is that a very small number of Western scientists and technologists, using all the enormous resources of a modern urban-industrial society, has achieved certain results, which we choose to call the “conquest of space.” Up to the present these achievements have been of practical significance only to a tiny handful of human beings. Neither “man,” the species, nor “man,” the beneficiary and victim of culture, nor yet “man,” the psycho-physical organism, unique person, and locus of unshareable experiences, has as yet been discernibly affected by the exploits of Gagarin and Glenn, the collective triumphs of rocketry, guidance systems, and space medicine. These by-products of the armament race have neither increased nor diminished the probability of nuclear war. Nor have they, as yet, contributed to human well-being or to human ill-being in other contexts than that of war. But perhaps at some future date the achievements of the engineers and scientists may be of real consequence to “man,” in all the senses of that ambiguous word. It will be our task, in a later paragraph, to consider some of the ways in which the generic, cultural, and personal statures of “man” may be increased or diminished by tomorrow’s more far-reaching “conquest of space.” Meanwhile, let us look a little more closely into the meaning of this suspiciously picturesque phrase.

Inter- and intra-specific conflict in the service of the instincts is as old as life itself. But exclusively intra-specific conflict, socially organized as war, justified as economic policy, and sanctified as patriotism or a crusade—this is a strictly human invention, coeval with civilization, and a by-product of acculturated man’s capacity to create and worship symbols, to hypnotize himself with his own verbiage, to rationalize his ugliest passions, and then to objectify his rationalizations as gods, goals, or ideals. Metaphors drawn from war turn up in the most unexpected contexts and bear witness to the fact that, precisely because he is *sapiens*, *faber*, and *loquax*, acculturated man is also (and up to the present inescapably) *Homo bellicosus*. Thus, a religion professedly of love and spiritual inwardness gets embodied in a *Church Militant*. This Church Militant prays collectively to a *God of Battles*, recruits *Christian Soldiers* and organizes them in

*Salvation Armies* and *Companies of Jesus* under the command of *Generals*. Turning from the religious to the intellectual field, we find historians talking of the *march of ideas*, the *overthrow* of some system of philosophy, say, or medicine or astronomy, and the *victory* of some other system. And within another scientific and technological frame of reference we are treated to loud boasts about man's *conquest of nature*, a special case of which is that *conquest of space* with which we are presently concerned.

In the ethical system of the Greeks, *hubris*—the overweening bumptiousness of individuals or groups in their dealings with other human beings or with the natural order—was regarded as a very grave and since it invited condign punishment, an extremely dangerous form of delinquency. Monotheism de-sanctified Nature, with the result that, while *hubris* in relation to one's fellow man was still condemned, *hubris* in relation to the non-human environment ceased, under the new dispensation, to be regarded as a sacrilege or a breach of the moral code. And even today, when the consequences of our destructive bumptiousness are threatening, through erosion, through deforestation and soil exhaustion, through the progressive pollution and depletion of water resources, to render further human progress ever more difficult, perhaps in a relatively short time impossible—even today the essential wickedness of man's inhumanity to Nature remains unrecognized by the official spokesmen of morality and religion, by practically everyone, indeed, except a few conservationists and ecologists. Acculturated man's "conquest of nature" goes forward at an accelerating pace—a conquest, unfortunately, analogous to that of the most ruthless imperialist exploiters of the colonial period. Man, the species, is now living as a parasite upon an earth which acculturated man is in the process of conquering to the limit—and the limit is total destruction. Intelligent parasites take care not to kill their hosts; unintelligent parasites push their greed to the point of murder and, destroying their own food supply, commit suicide. Boasting all the while of his prowess as a conqueror, but behaving, while he boasts, less intelligently than the flea or even the hookworm, man, the acculturated parasite, is now busily engaged in murdering his host. It is still possible for him to give up his suicidal vampirism and to establish a symbiotic relationship with his natural environment—still possible, but admittedly (with human numbers threatening to double in less than forty years) very difficult. If this very difficult choice is not made, made soon, and made successfully, acculturated man's misdirected cleverness may conquer nature too thoroughly for the survival of his own high culture, perhaps even for the survival of man, the species.

The picturesque, but wholly inappropriate, military metaphor in terms of which acculturated man has chosen to speak of his parasitic relationship to our planet is now being used in relation to Russian and American successes in launching artificial satellites and putting astronauts into orbit. Space may well be infinite; and, even if finite, the universe is unimaginably vast. In a world where there are galaxies separated from our own by a distance of six billion light-years, any talk by rocket enthusiasts about “man’s conquest of space” seems a trifle silly. Men will land on the moon within the next few years, and within a generation, no doubt, will land on Mars. If there is life on Mars, every round trip by an astronaut will involve grave biological dangers for all concerned. Micro-organisms, to which living things on earth possess no inherited or acquired immunity, may be brought back from our sister planet. Conversely, living things on Mars may succumb to the viruses and bacteria introduced by visitors from Earth. The fruits of this first and, in relation to the whole universe, insignificant “conquest of space” might easily prove to be sudden and irreparable disaster for two biological systems, developed through three or four thousand million years of evolution. And of course the same sort of risks would be run by earthlings visiting any life-supporting globe in any part of the universe.

Acculturated man is immensely clever, and his representatives will soon be able to land an astronaut on another planet and bring him back alive. By journalists and political propagandists, this future ability has been nicknamed “the conquest of space.” In what way will this “conquest of space” affect “man’s stature”?

Obviously, if the coming and going between planets should result in a biological disaster to human beings or their principal sources of nourishment, the stature of man, the species, would be diminished—conceivably to zero. But the worst may never happen. Let us assume, for the sake of argument, that round trips to other planets can be made under completely aseptic conditions or, alternatively, that terrestrial organisms will turn out to be immune to extra-terrestrial bacteria and viruses. In this event, how will the “conquest of space” affect the stature of man, the species, man, the product and producer of culture, and man, the unique individual and locus of unshareable experiences?

Preoccupied as they are with new worlds to conquer, the rocket enthusiasts are apt to forget that their much-touted Space Age is also the Age of Exploding Populations. Like unintelligent parasites draining the lifeblood of their host, three thousand millions of human beings now live, most of them very poorly, on the surface of our planet. By the end of the twentieth century there will be, in all probability, six

thousand millions, desperately trying to extract twice as much food and, if industrialization becomes general, four times as much water and at least ten times as much fossil fuel and metallic ore as are being extracted from the earth today. When the attention of our high-flying rocket enthusiasts is called down to these simple, grisly facts of terrestrial arithmetic, they airily insist that the demographic problem of man, the species, together with all the social, political, and economic problems stemming from the enormous and accelerating increase in human members, can be solved very simply. How? By shooting two or three billion people into space and telling them to go and colonize some other planet.

This method of increasing the stature of man, the species, by peopling other worlds with the overplus of this world's numbers was proposed many years ago by Professor J. B. S. Haldane in his *Possible Worlds* and again in the *Last and First Men* of Olaf Stapledon. Inasmuch as their authors thought in terms of startling genetic changes and enormous lapses of time, these books may be described as Evolutionary Utopias. Given enough time, evolution can accomplish practically anything. In the course of the last three or four billion years it has performed the almost infinitely improbable feat of developing a human being out of a giant molecule. In the future, directed by human intelligence, it might perform hardly less improbable feats in considerably shorter periods of time. But by the standards of human history, even these shorter periods will be extremely long. In the Evolutionary Utopias of Haldane and Stapledon many thousands, even millions, of years were required for the development, by controlled breeding, of new sub-races of human beings capable of surviving and reproducing themselves in the forbidding environments of other planets. The rocket enthusiasts seem to imagine that migration to some wholly alien world could be undertaken, within the next hundred years or so, by men and women in no way different, genetically speaking, from ourselves. Being engineers and not life scientists, they are pretty certainly mistaken in this matter. In the present context it is the Utopian dreamers of biological dreams, not the so-called "practical men," who make sense. And even in relation to such an easily calculable factor as expense, the rocket enthusiasts are wildly unrealistic. To land as few as five thousand adequately equipped colonists on another planet would cost several times the combined budgets of the U.S.A. and the U.S.S.R. Moreover, even if it were physically, financially, and politically feasible to fire off whole boatloads of emigrants into outer space, would the forcible displacement of, say, five hundred million uprooted men and women solve the primary demographic problem, or any of the related social, political, and economic problems, now confronting us? During the nineteenth century millions of Europeans emigrated to the New World; but Europe's political and economic problems were not thereby eliminated, and Europe's population went on steadily increasing,

as though nothing out of the ordinary had happened. There seems to be no good reason for supposing that emigration to Mars will do more for Earth as a whole than emigration to the Americas and the Antipodes did for nineteenth-century Europe.

We see, then, that our “conquest of space” is a conquest only in some picturesquely Pickwickian sense. It seems very unlikely, at least in the near future, that man, the species, will increase his stature by becoming a cosmic imperialist. Moreover, even if cosmic imperialism should ever be within our power, the colonization of other planets will bring no automatic solution to this planet’s demographic, political, and economic problems. Man, the species, might add a few cubits to his stature; but the stature of acculturated man, of the creature who, for all these centuries, has been trying to make a go of collective living, will probably remain as low as it has been in the past and is today.

In the preceding paragraphs, the word “stature” has been treated as a word with a meaning expressible in concrete terms. Thus, if man, the species, should ever become a cosmic imperialist, his stature will increase in proportion to the number and size of his extra-terrestrial colonies. And if, in spite of the extra-terrestrial colonies, the stature of acculturated man should fail to increase, it will be because of some observable and even measurable failure to solve the age-old problems of collective living here on earth. But the meaning of the phrase “man’s stature” is not always expressible in concrete and measurable terms. It may, and in fact often does, refer to a merely notional entity—the image which acculturated man forms of himself, when he starts to philosophize. Used in this way, the phrase “man’s stature” stands for the fancies and beliefs about human nature current at any given time and place. Thus, in a totemistic, magic-practicing, and fertility-worshipping society, “man” (in all the senses of that word) has the same stature as all the other denizens of a world in which everything is simultaneously natural and supernatural. With the emergence of self-consciousness comes a change in metaphysical perspective. Acculturated man separates himself from the rest of nature, and the stature he now assigns himself is radically different from the stature assigned to every other kind of creature. He sees himself as a member of a species unlike all other species, the final masterpiece of a Creator who has framed the inferior world of nature for man’s benefit and with an eye to man’s moral and spiritual education. In medieval Christendom “man’s stature”—the current notions, in other words, about human nature and its place in the universe—was at once gigantic and dwarfish. Man, the species, man, the beneficiary and victim of culture, man, the unique individual and locus of unshareable experiences, was the central figure in a tiny spherical cosmos, constructed expressly for the education of human

beings and administered by a supernatural dyarchy, with one seat of government in heaven and another, underground, in hell. In this stuffy little all-too-human universe, words did not stand for given things; on the contrary, things stood for given words— words in the Bible or in one of the treatises of Aristotle. Nothing was studied for its own sake, but only for the sake of what it was supposed symbolically to signify. Projected into the external world, reminiscences of Roman law, Greek metaphysics, Pauline theology, Arabian astronomy, and old wives' tales of magic were rediscovered “out there” and triumphantly recognized as cosmic facts. Inasmuch as medieval man had created a world in the image of his own culturally conditioned mind, his “stature” seemed heroic. But this self-image was heroic only in relation to the windowless, artificially lighted echo-chamber which busy metaphysicians had scooped out of the totally mysterious datum of a cosmos probably infinitely extended and perhaps indefinitely self-renewing. In relation to this other universe—the universe that has gradually revealed itself to later observers—the “stature” of medieval man shrinks from the heroic to the bumptiously absurd. But, like the acculturated man of every other period and place, Europe's medieval man was something more and other than the victim-beneficiary of the locally current thought patterns. Medieval man was also man, the psycho-physical organism, the unique person and locus of unshareable experiences. As such, he could always break out of the haunted echo-chamber that he had been taught to regard as the universe—could always escape from his notional prison into the wordless freedom of instinct and animality on the one hand, of mystical spirituality on the other. For the many there were sex, strong drink, and the recurrent orgies of a paganism that obstinately refused to die; and for the few there was the way of contemplation, the flight of the alone to the Alone. What passed for the universe might be no more than a grotesque projection of organized ignorance bumptiously proclaiming that it was in possession of absolute Truth; but above and parallel with his notional world stretched the boundless, un verbalized realities of unshareable subjective experience. The victim-beneficiaries of medieval culture retained their sanity by periodically de-conditioning themselves and becoming, for a little while, centers of pure receptivity, open to the dark gods, or the gods of light, or to both sets of deities alternately or even simultaneously. What was done by the prisoners of medieval European culture has been done, and is still being done, by the victim-beneficiaries of every other culture. A totally acculturated man would be a monster. Sanity and humanity can be maintained only by regular escapes from culture into the unconsciousness of sleep, and by occasional conscious escapes into “peak experiences” on the animal, aesthetic, or mystical levels. Measured in terms of the number and quality of his unshareable peak experiences, the “stature” of a victim of socially organized ignorance and insanity may be much higher than that of the too-docile beneficiary of even the most admirable culture.

It seems hardly necessary to point out that the transformation of the haunted echo-chamber of medieval culture into the universe of modern science had been going on for several hundred years before anyone began talking about the “conquest of space.” The Copernican revolution of the sixteenth century was followed by a succession of scientific revolutions no less prodigious—revolutions in astronomy, in physics, in chemistry, in geology, in biology and paleontology; revolutions, at the same time, in technology, so that we are now equipped with fantastically powerful instruments for the exploration of the external world and the analysis of its fine structure. Observations from the surface of the airless moon, or from an artificial satellite outside the earth’s obscuring atmosphere, will undoubtedly provide new information about the stars in our own galaxy and about the other galaxies within the range of our instruments. But, in the present context, the significant fact is that, long before space was “conquered,” it was thoroughly observed. The probably infinite, perhaps everlasting and self-renewing universe, which has replaced the haunted echo-chamber of earlier centuries, was gradually constructed by logical thought working upon the raw materials provided by earth-based observers.

In relation to the fathomless mystery of a cosmos which future observations from somewhere “out there” will doubtless render even more mysterious, what has happened to “man’s stature”? In other words, what kinds of self-image have been current among acculturated people since the replacement of the haunted echo-chamber by the ever vaster and ever more enigmatic universes described by successive generations of cosmologists? The combination of Cartesian dualism with post-Copernican astronomy, post-Lyellian geology, post-Maxwellian physics, and post-Darwinian evolutionary theory resulted, for a time, in a considerable diminution of “man’s stature.” In a cosmos of infinite extensions and durations, in which matter (in the pejorative, Platonic sense of that word) was regarded as the only genuinely real reality, and where mind, in consequence, could be nothing but an irrelevant epiphenomenon, acculturated man could hardly fail to think poorly of human nature—could hardly fail to hanker nostalgically for the coziness of the home-made medieval cosmos, the soul-satisfying indubitabilities of the scholastic world view. Each in his own way, Lyell, Herschel, Maxwell, and Darwin were mighty conquerors of space, time, and matter. But for many of their more sensitive contemporaries, these scientific conquests were cultural and psychological defeats. The realization that they were living at the heart of a four-dimensional infinity was somehow appalling to the victim-beneficiaries of a tradition which had so recently proclaimed that the world was created in 4004 B.C. and was destined, within some few centuries, to be uncreated, judged, and definitely disposed of for all eternity. Confronted by boundless space and endless time, many Europeans lost their faith. And it was not only in Adam and Eve, in Noah’s ark and Joshua’s trumpet, that they



had ceased to believe, What had been undermined was their faith in themselves, in the human mind as a discoverer of reality and maintainer of values.

It is interesting to note that the beneficiaries and victims of Indic culture have never had the slightest difficulty in reconciling the idea of infinite time and infinite space with the idea of the potentially infinite value of the human spirit. A ninth-century Mahayana Buddhist, for example, would have felt completely at home in the universe of twentieth-century astronomy, with its observed distances of billions of light-years, its island galaxies, its innumerable stars and, presumably, habitable planets. The silent gulfs of space which Pascal found so terrifying, the endless vistas of that “mere matter” so much despised and hated by the Platonists would have left him completely undisturbed. Brought up to accept as self-evident the philosophy of the Greater Vehicle, he knew that Mind, Suchness, the Buddha Nature, the Void, is totally present at every instant of time and at every point in space. He knew too that to be conscious of the primordial fact is enlightenment and that, as a human being, he was capable of such awareness and so might become the Buddha that, in essence, he had always been.

In the West, as we have seen, scientific progress seemed, for a time, to entail a grave diminution of “man’s stature.” Everything human, it seemed, had been reduced to something less than human, every positive value was merely a negative value in fancy dress. In recent decades the dualistic and reductionist philosophy, which once transformed successive scientific conquests into human defeats, has been replaced, in the minds of many thinkers, by a world view a good deal more like that of the Mahayanists or of those fourteenth-century Chinese thinkers, whose philosophy, with its blending of Confucian, Taoist, and Buddhist elements, exercised an influence, by way of the missionaries, on Leibniz and (as Joseph Needham has pointed out in his great *History of Chinese Science*) anticipated, six hundred years too soon, many of the fundamental ideas of modern organicism. Modern organicism had its proximate roots in the speculations of Driesch and J. S. Haldane. In Lloyd Morgan’s hands it became a doctrine of Emergent Evolution, according to which, with every increase in the complexity of organization, new and unpredictable characteristics emerge into manifest existence. Thus, molecular characteristics emerge from a higher organization of atoms; colloidal characteristics from a higher organization of molecules, and so on, up through cells, tissues, organs, organisms of greater and greater complexity, societies of organisms. Organicist ideas are fundamental in Whitehead’s world view. In another form they reappear in the work of an eminent philosophical biologist, Ludwig von Bertalanffy. And

here, in translation, is a notable paragraph from the work of that evolutionary scientist who was also a mystic, Father Teilhard de Chardin. There is, says Teilhard, “a third perspective, neither mechanistic nor vitalistic, towards which the new Physics and the new Philosophy seem to be converging—the conception that Mind is neither something superimposed, nor a mere accessory within the cosmos, but that it simply represents the state of higher organization assumed within ourselves and around us by that indefinable something which we may call, for lack of a better phrase, ‘the stuff of the universe.’ Nothing more, but also nothing less. Mind is neither a meta-, nor yet an epi-phenomenon: it is THE phenomenon.”

We are now, it seems to me, in a position to answer our final question—the question about “man’s stature,” or (if we prefer to speak a little less portentously and more accurately) “modern Western man’s self-image.” The “conquest of space,” whether by rocket or by radio telescope and two hundred-inch reflector, is not something which, of itself, can either increase or decrease our “stature.” Its effects upon a man’s view of himself depend entirely upon the nature of the philosophical frame of reference within which the results of the “conquest” are thought about. To those whose world view is dualistic and reductionist, the “conquest” of an infinity of blank space and mindless matter will bring an ever more oppressive sense of human loneliness, insignificance, and futility. By those, on the contrary, who believe (and feel that they have good reason to believe) that even atoms are organisms and possess psychoid aspects which, at progressively higher levels of organization, will emerge into life and consciousness, by those for whom, in Teilhard’s words, mind is not a meta- nor an epi-phenomenon, but simply THE phenomenon, the “conquests” of science will be thought about in a very different way. These people will see themselves not as isolated and irrelevant centers of consciousness at the heart of universal mindlessness but as integral parts of an organic world, in which the potentialities of mind have always been present. They will see themselves as the emerged and still emergent products of a vast evolutionary process that has already actualized some of these potentialities and can, as individual and social organization rises to higher levels, actualize many more. Let us hope, too, that they may come to see themselves not as the murderous and suicidal “conquerors” of Nature and one another but as purposeful and responsible collaborators with the evolutionary process that is perpetually creating, transforming, and transfiguring the world.

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